

EFFECTS OF COMMUNITY-BASED, VIDEOTAPE, AND FLASH CARD INSTRUCTION OF COMMUNITY-REFERENCED SIGHT WORDS ON STUDENTS WITH MENTAL RETARDATION

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Community-referenced sight words and phrases were taught to adolescents with mild and moderate mental retardation using three instructional methods in two locations. Words were presented on flash cards in a school setting, on videotape recordings in a school setting, and on naturally occurring signs in the community. During each session, participants were taught one third of the words in each of these conditions and were then tested at the community sites. A constant prompt delay procedure was used to promote stimulus control to the experimenter's cue initially and then to transfer control to the textual stimuli used for training. A multiple baseline across participants design was employed. Results showed rapid acquisition of the community-referenced sight words in all three training conditions and generalization from the flash card and videotape conditions to the community sites.

DESCRIPTORS: sight word instruction, community training, videotape training, mentally retarded

Many youths with mental retardation lack functional reading skills and have not mastered critical survival vocabulary (e.g., informational, warning, and safety signs) relevant to day-to-day living (Blyden, 1989). The ability to read these words might contribute to speech and language development, gainful employment, and more independent community functioning. To promote independence in the community, students with mental retardation should learn to recognize and comprehend certain survival words (Feinberg, 1975).

Most studies investigating procedures to teach sight word vocabulary have been conducted in school classrooms and have used flash cards to present words (Ault, Gast, & Wolery, 1988; Doyle, Wolery, Gast, Ault, & Wiley, 1990; Gast, Ault, Wolery, Doyle, & Belanger, 1988). Using flash cards to present sight words in the classroom is a traditional practice for teachers who cannot or will not

go into the community for training. A disadvantage, however, is that words on flash cards are an artificial representation of natural textual discriminative stimuli; such instruction may not promote generalization to the natural stimuli.

On the continuum between artificial and natural training environments are simulated environments. Videotape instruction is a relatively low-cost means of simulating the stimulus conditions found in the environment and modeling behaviors needed to succeed in that environment. Recently, videotape modeling has been shown to be an effective tool in promoting the acquisition and generalization of functional skills. For example, students with autism acquired and generalized a chain of purchasing responses using direct instruction combined with videotape models of familiar peers shopping (Haring, Kennedy, Adams, & Pitts-Conway, 1987). Video modeling also has been used to teach acquisition and generalization of conversational skills by children with autism (Charlop & Milstein, 1989). Thus, videotape modeling may be an alternative to more costly instruction in the natural environment to produce generalization from training to natural environments.

When either artificial (flash card) or simulated (videotape) stimuli are used to teach sight words,

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it is important to address transfer of control from trainer-delivered to naturally occurring cues. Studies have shown that the prompt delay procedure has been more effective than fading strategies for transferring stimulus control from a trainer's artificial prompt to the naturally occurring discriminative stimulus when teaching sight words to various populations (Doyle et al., 1990; Gast et al., 1988). Furthermore, a constant prompt delay was more efficient than progressive prompt delay for teaching community signs (Ault et al., 1988).

Sight word instruction has been conducted mainly using flash cards in a school setting; however, studies have yet to investigate the effectiveness and efficiency of teaching community-referenced sight words using either videotape or community-based instruction. Because the goal is for students to read and respond to words and phrases such as those presented on signs in the community, training in the community eliminates the need to program for transfer of stimulus control from artificial or simulated settings. This also eliminates the time, effort, and cost of constructing simulations. Community settings present naturally occurring discriminative stimuli and consequences to which students emit the natural response topography. The present study, therefore, compared teaching community-referenced sight words and phrases using flash cards, videotape, and naturally occurring signs. The community sight words were taught using a constant prompt delay procedure.

METHOD

Participants attended two segregated special education classes in regular junior high schools. Their ages ranged from 13 years 0 months to 17 years 10 months, and their WISC-R or Stanford Binet IQs ranged from 45 to 65. Five of the 6 participants were moderately mentally retarded. Don, who participated in Group 2, was mildly mentally retarded. Participants' scores on the reading subtest of the Wide Range Achievement Test, Revised fell below Grade 3. Age equivalents from the Peabody Picture Vocabulary Test ranged from 3 years 6 months to 6 years 8 months. Participants were trained in two groups of three.

Settings

Flash card and videotape instruction took place in a room adjacent to participants' special education classroom. Community training and testing occurred in various sites nearby, including the school building, school grounds, and three stores in a local shopping center. Students frequented the shopping center either alone or with parents. The words and phrases trained were functional and frequently encountered in business and other community settings.

Materials

An initial pool of 30 informational, warning, and safety signs was identified. Fifteen were located in natural community sites, and 15 were purchased from stores. These were placed in sites where they could plausibly occur in and around the school.

In the flash card condition, words were typed using a Macintosh SE® computer (70-point Helvetica font) and laser printed on cards (8.5 in. by 11 in.). Each card, white with black print, was laminated. The videotape condition consisted of 15-s recordings of the community signs. Each recording included an initial 5-s distance shot to present naturally occurring environmental stimuli. The camera lens then zoomed to the textual stimuli on the sign for 10 s.

Screening Procedure

Potential participants were screened individually on the 30 signs to identify those that were unknown. The words and phrases were tested first with flash cards, then, if necessary, with videotape, and finally in the community. For each method, the experimenter presented the sign, ensured that participants oriented to it, and said, "What does the sign say?" He then asked, "What would you do if you saw that sign?" Participants were praised for attending, but no response-contingent consequences were provided. The experimenter recorded participants' responses verbatim. Participants were eliminated from further participation if they responded correctly to 21 or more signs on any one of three screening tests. Signs for which errors occurred to both questions in all three screening con-

Table 1
Sign Characteristics

Sign ^a	Approximate size (in inches)	Color	Location	Experimental group
NOT AN EXIT	12 by 8	White background, red letters	School, door	1 and 2
Service	36 by 12	Gray background, black letters	Sears, hanging from ceiling	1 and 2
GARAGE SALE	12 by 8	Orange background, black letters	School, fence	1 and 2
CATALOG ORDER PHONES	36 by 6	Wood background, black letters	Sears, wall	1 and 2
Cashier	36 by 12	Gray background, black letters	Sears, hanging from ceiling	1 and 2
Package Pickup	41 by 17	White background, red letters	J. C. Penney, outside wall of store building	1 and 2
Men's Fitting Room	29 by 17	White background, red letters	J. C. Penney, wall	1 and 2
Shoplifters Will Be Prosecuted	10 by 3	White background, black letters	Elder Beerman, mirror	1
Sorry, WE'RE CLOSED	12 by 8	Black background, white and orange letters	School, window	1
Employees Only	8 by 6	White background, black letters	J. C. Penney, door	2
NO SHOES, NO SHIRT, NO SERVICE	12 by 8	Black background, red letters	School, window	2

^a Presented as shown on community and videotaped signs.

ditions were identified as potential training words. Table I shows the training signs and their characteristics for the two groups.

Experimental Design

A multiple baseline across participants design was implemented for the 3 participants in Group 1, and was then replicated with the 3 participants in Group 2. Nine signs were taught to each group (see Table 1), three in each of the three experimental conditions.

Community Testing

During baseline and immediately after instruction of all nine words instructed in each training session, participants were tested at the community sites shown in Table 1 (i.e., the same settings as those in the community training condition). Par-

ticipants were asked, "What does the sign say?" and "Tell me what you would do if you saw that sign?" Participants were assessed on two successive trials each test session (i.e., all nine words were tested once and then they were tested again). The percentage of correct responses for each training condition was computed. A criterion of 100% correct responding for three consecutive community test sessions (i.e., six trials) was required for training to be terminated for a sign. Participants were praised for appropriate attending, but no response-contingent consequences were provided.

Training

The 3 participants in each group were taught the same nine signs. Triads of three signs were taught by each of the three instructional methods in counterbalanced order across participants (i.e.,

for Group 1, Triad 1 was taught in the community to Sam, by videotape to Pat, and by flash card to Nan). All nine signs, three in each experimental condition, were trained during each session. Each sign was presented in three training blocks in a counterbalanced sequence each session. For example, in the flash card condition, the training trials for the three signs were Signs 1, 2, 3; 2, 3, 1; 3, 1, 2. Each sign was trained in a block until three consecutively correct responses occurred or until 10 trials were administered, whichever came first. Both mands (i.e., "What does the sign say?" and "What would you do if you saw that sign?") were tested for each sign, with an intertrial interval of 3 s between mands.

The sequence of administering the three training conditions also was counterbalanced across sessions for each participant. For example, if the training sequence for Session 1 was flash card, videotape, and community, for Session 2 it was videotape, community, and flash card, and for Session 3 it was community, flash card, and videotape. If a participant achieved criterion responding on one mand before the other mand, training was reduced to every third trial for the acquired response until the unlearned response reached criterion or until 10 trials had been administered, whichever came first. When a sign reached the community test criterion (i.e., 100% correct responding on three consecutive community test sessions), it was discontinued. Training then consisted of the subcriterion signs in their respective training conditions. A 3-s intertrial interval between signs was used in the flash card and videotape conditions, but it was not feasible to maintain a constant intertrial interval in the community condition because of the variable travel time between signs.

A constant prompt delay procedure was used to promote stimulus control initially to the experimenter's prompt and then transfer control to the words themselves. The initially neutral stimuli (words on flash card, videotape, natural sign, and the experimenter saying, "What does the sign say?" and "What would you do if you saw that sign?") and the controlling stimulus (experimenter's verbal model) were presented concurrently on the first trial of the first training session (i.e., 0-s delay). The

experimenter pointed to the sign, ensured that participants oriented to it, and said, "What does the sign say?" He immediately presented the verbal model (stated aloud what the sign said). Then he asked, "What would you do if you saw that sign?" and immediately presented the verbal model (stated aloud what to do when seeing that sign). During the second and all subsequent trials, the experimenter initiated the procedure as described, but counted silently for 4 s after saying each mand before providing the verbal model.

Correct response anticipations (i.e., correct responses before the verbal prompt) and correct waits (i.e., correct responses after the verbal prompt) resulted in descriptive praise. The experimenter repeated the correct response and commenced the next trial using the 4-s prompt delay procedure. For nonwait errors (i.e., incorrect responses before the verbal prompt) the experimenter said, "Wait if you don't know." The correct response was then given and participants were asked to repeat that response. When participants imitated the correct response, the experimenter initiated the next trial. For wait errors (i.e., incorrect responses after the verbal prompt) and no responses, the experimenter said, "no," repeated the correct response, had participants imitate the correct response, and initiated the next trial. Errors on three consecutive training trials resulted in a return to 0-s prompt delay for one trial; the 4-s constant prompt delay procedure was then reinstated.

In the videotape condition, participants viewed the long-distance shot of the sign for 5 s; then the camera zoomed into the textual stimuli on the sign during the first trial. Subsequent trials in that training block, consisting only of the close-up shot, occurred for three consecutively correct response anticipations or 10 trials. This procedure was used each time a new block of training trials was presented. One trainer provided all instruction for both groups, with the exception of two retraining trials that were conducted by the secondary observer.

Maintenance Probes

Maintenance probes were conducted at approximately 1-week intervals after the community test criterion was attained until the end of the school

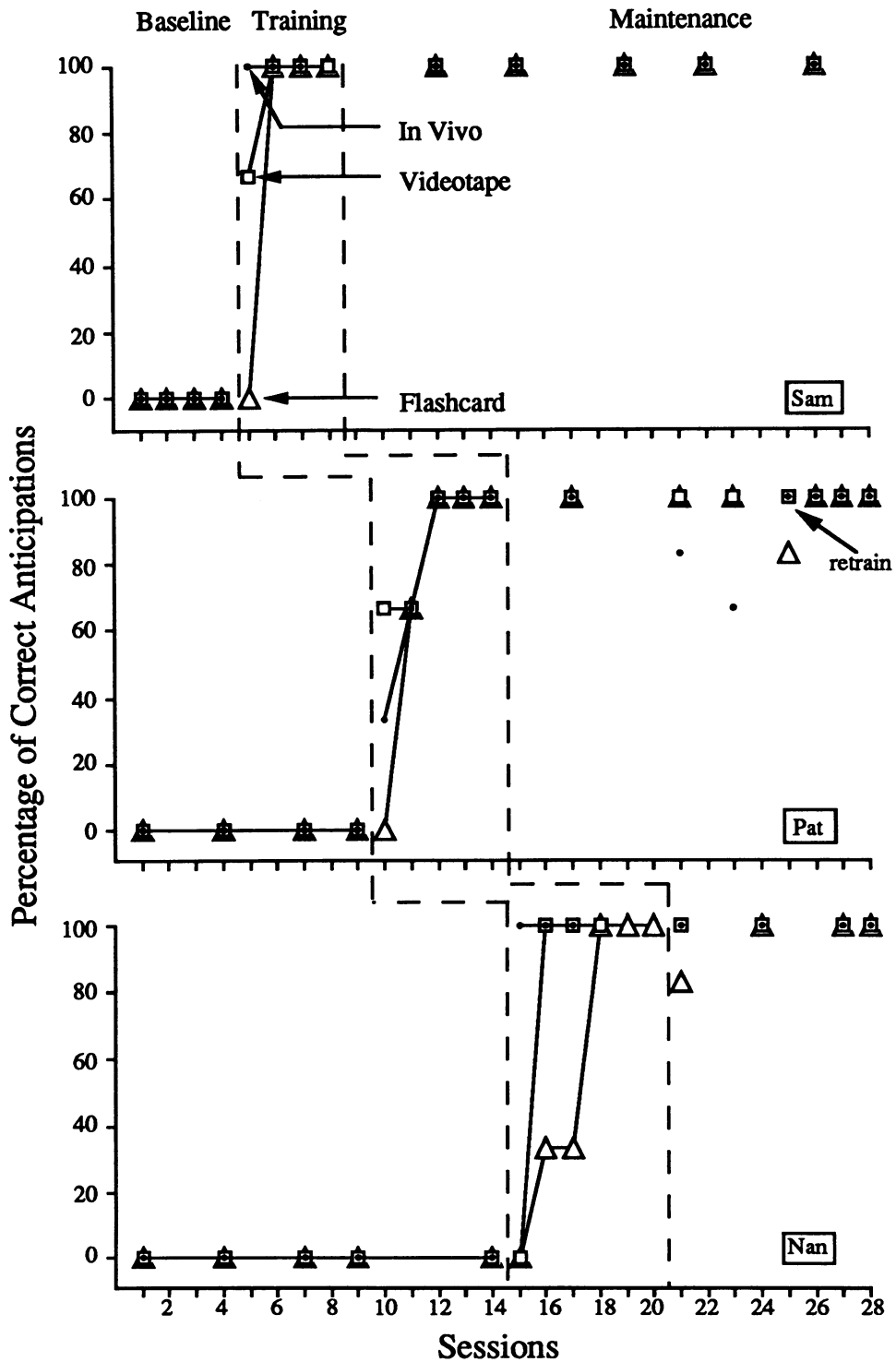


Figure 1. Percentage of correct anticipations to the mand "What does the sign say?" for each experimental condition for Group 1.

year. Probes were conducted by the experimenter or secondary observer using the same procedures as those in the community test condition. Participants were praised for appropriate attending, but no response-contingent consequences were provided. Errors occurring on two consecutive maintenance probes resulted in retraining at the community site using the constant prompt delay procedure until three consecutively correct response anticipations occurred. The number of maintenance probes was limited for Group 2 because the school year ended.

Flash Card Test

The nine signs trained were tested using flash cards following the third maintenance probe for Group 1 participants. High performance on this test suggests that responding in the community setting was not under the control of irrelevant stimuli (e.g., sign location). Because of the substantial differences between the textual stimuli presented on the flash cards and those in community settings (see Table 1), high test performance indicates not only that stimulus generalization occurred but also that participants were responding to the textual stimuli in the community. The flash cards were presented sequentially and the two mands were tested for each word. No response-contingent consequences were provided. Because the school year ended, this test could not be administered to Group 2.

Response Definitions and Data Collection

Only the first response after the presentation of the mands was scored during testing and training. The experimenter recorded data trial by trial. Only correct response anticipations counted toward criterion performance.

For the mand "What does the sign say?" any correct response articulated clearly enough to be understood was scored as correct; students did not have articulation problems. For the mand "What would you do if you saw that sign?" a set of response definitions was developed for all 30 signs in the initial pool. For each sign, a general dictionary

definition was adopted and examples of acceptable responses listed. For example, the general definition for "Help Wanted" was "any response that indicates that employment could be obtained there." An example of an acceptable response was, "I could ask for a job there." Responses were scored correct if they were consistent with the general definition.

Five potential responses were recorded during training in all three experiment conditions:

1. Correct anticipation—correct response after the presentation of the sign and mand, but before the experimenter's model.
2. Correct wait—correct response within 4 s after the experimenter's model.
3. Nonwait error—any incorrect response before the experimenter's model.
4. Wait error—any incorrect response within 4 s after the experimenter's model.
5. No response—absence of a verbal statement within 4 s after the experimenter's model.

A secondary dependent measure, training time, was calculated as the cumulative duration of instruction in each condition for each participant. This dependent measure included the duration of presenting instructional stimuli and consequences by the experimenter and participant's responding. Travel time to community sites was excluded from this dependent measure.

Interobserver Agreement

Interobserver agreement was calculated between the experimenter and a secondary observer for approximately 25% of testing and training sessions. Interobserver agreement was conducted for each participant by audiorecording experimenter mands and participant responses. Agreement was calculated using the point-by-point method in which the number of agreements was divided by the number of agreements plus disagreements and multiplied by 100%. For the first mand ("What does the sign say?"), the agreement percentage range was 80% to 100%, with a mean of 97.1%. For the second mand ("What would you do if you saw that sign?"), the range was 84% to 100%, with a mean of 97.3%.

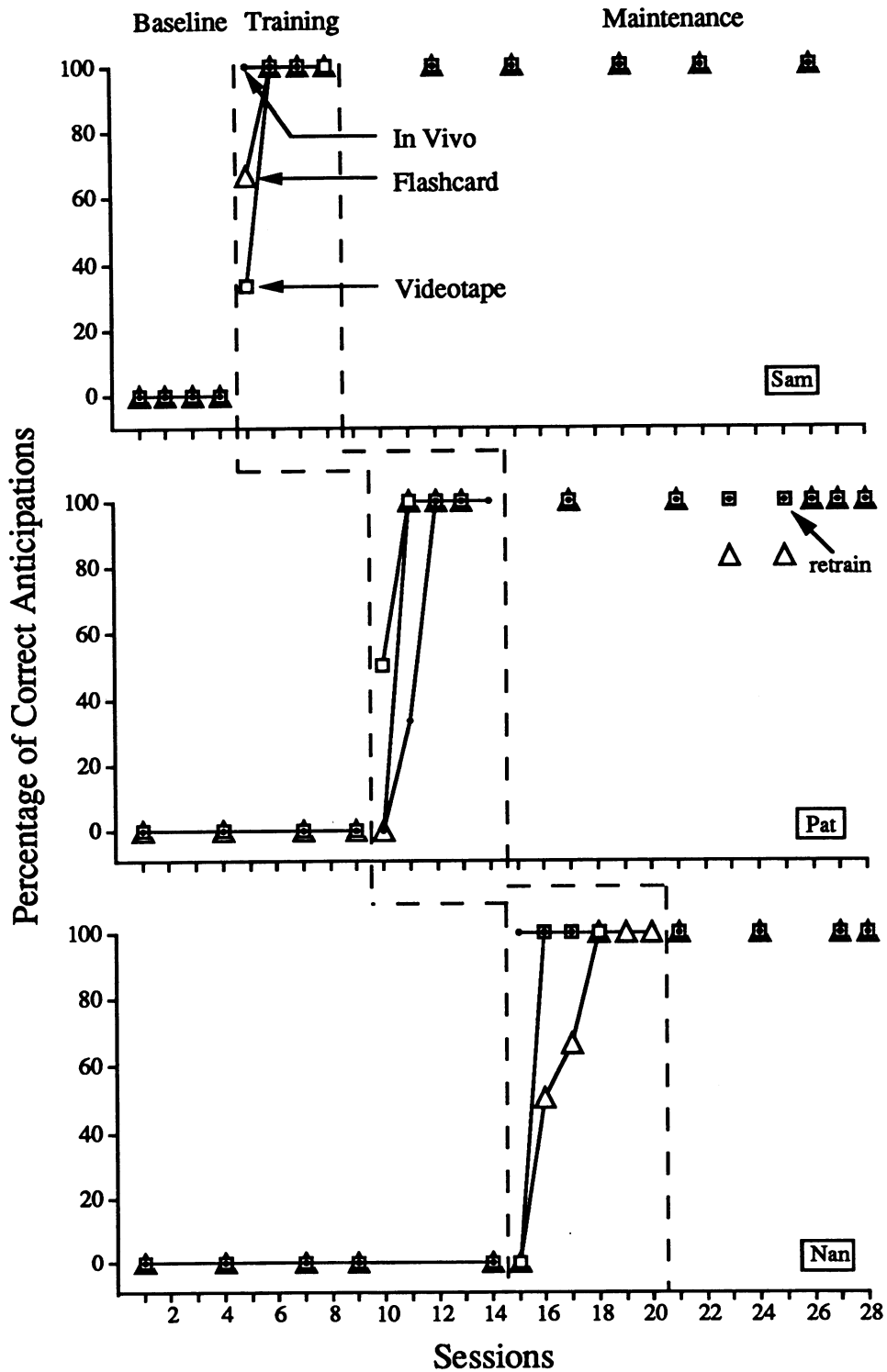


Figure 2. Percentage of correct anticipations to the mand "What would you do if you saw that sign?" for each experimental condition for Group 1.

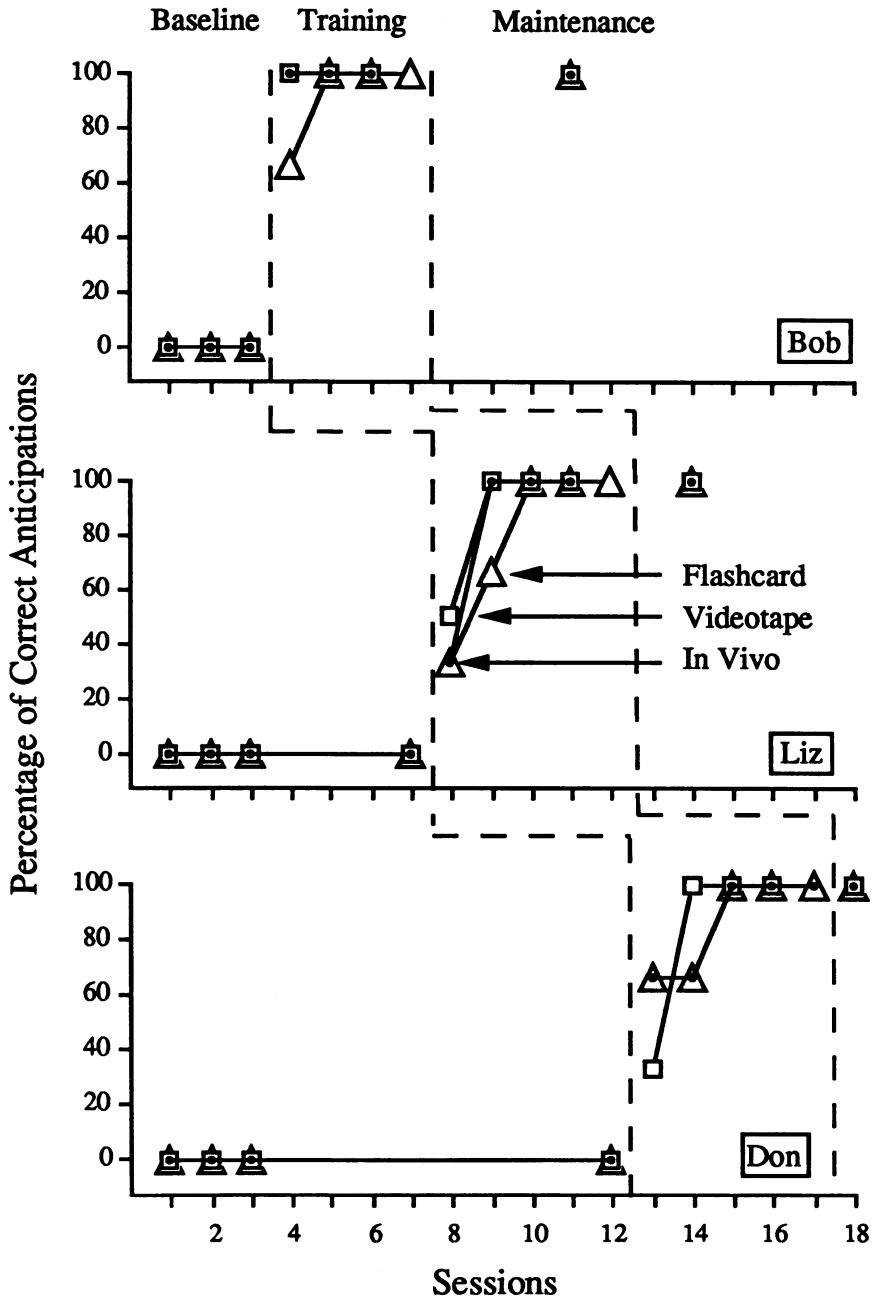


Figure 3. Percentage of correct anticipations to the mand “What does the sign say?” for each experimental condition for Group 2.

RESULTS

Effectiveness

Data showing the effectiveness of the three instructional conditions are presented in Figures 1

and 2 for Group 1 and Figures 3 and 4 for Group 2. These figures show the percentage of correct anticipations during community testing for the two mands, “What does the sign say?” and “What would you do if you saw that sign?” All participants

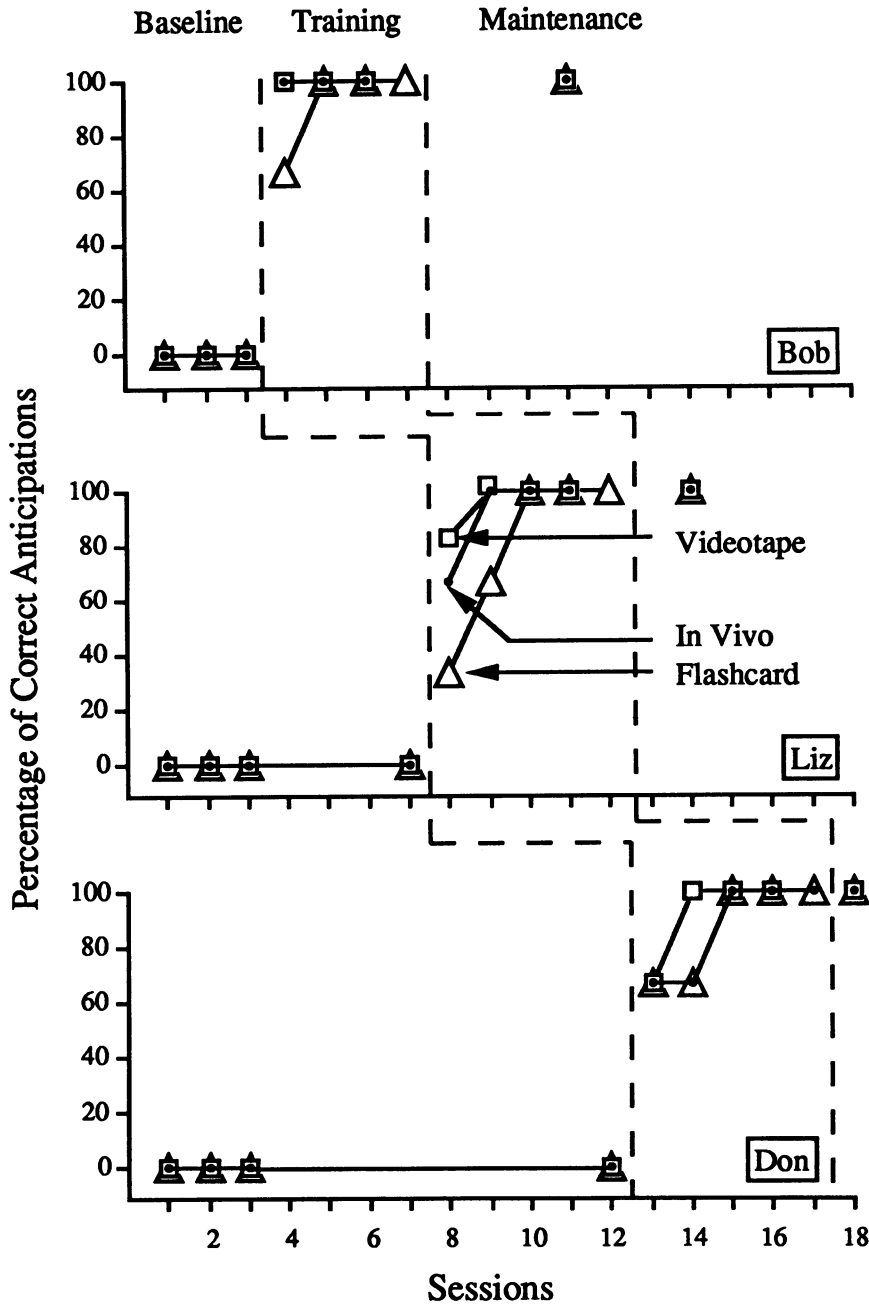


Figure 4. Percentage of correct anticipations to the mand "What would you do if you saw that sign?" for each experimental condition for Group 2.

had 0% correct responding during baseline. Each participant rapidly attained the acquisition criterion of 100% correct responding for three consecutive sessions on the community test (i.e., six trials) with

little variability among the three experimental conditions for both mands.

Maintenance data for Group 1 show that Sam had 100% correct responding for both mands across

Table 2
Efficiency Data for Mand "What Does the Sign Say?"

Training condition and participant	Training sessions to criterion	Training trials to criterion	Training errors to criterion	Training time to criterion (minutes)*	Percentage interobserver agreement
Flash card					
Sam	4	112	1	23	93
Pat	5	184	7	62	97
Nan	6	202	14	84	97
Bob	4	116	3	33	100
Liz	5	147	1	35	100
Don	5	154	2	42	100
Median	5.0	150.5	2.5	38.5	
Videotape					
Sam	4	114	2	42	100
Pat	5	158	9	65	100
Nan	4	133	9	50	100
Bob	3	86	0	32	96
Liz	4	118	2	37	100
Don	4	125	5	45	100
Median	4.0	121.5	3.5	43.5	
Community					
Sam	3	85	1	98	100
Pat	5	204	10	171	89
Nan	3	91	5	57	85
Bob	3	89	3	65	90
Liz	4	125	1	63	100
Don	5	145	2	60	100
Median	3.5	108.0	2.5	64.0	

* Training time is summed for "What does the sign say?" and "What would you do if you saw that sign?"

5 weeks. Pat maintained 100% correct responding after 1 week for Mand 1 ("What does the sign say?") and 2 weeks for Mand 2 ("What would you do if you saw that sign?"). She responded correctly to eight of the nine signs for Mand 1 in Probes 2 and 3 and to eight signs for Mand 2 in Probes 3 and 4. Probe 4 consisted of retraining and testing the two different signs in error during the previous probes. Probes 5 through 7 were then conducted without training, and Pat responded with 100% accuracy. Nan responded with 100% correct anticipations for all maintenance probes, with the exception of one sign for Mand 1 during the first test. Retraining was not necessary because she responded accurately on all subsequent tests. Figures 3 and 4 present maintenance data for Group 2. Only one probe was conducted for these partici-

pants because the school year ended; they maintained 100% correct responding.

Efficiency

Results showing the efficiency of instruction for the three training conditions are presented in Tables 2 and 3. For each participant the number of training sessions to attain the acquisition criterion (100% correct responding for three consecutive community tests), number of training trials to criterion, number of training errors to criterion, and training time to criterion are shown in the tables.

For both mands, the number of training sessions to criterion ranged from three (the minimum possible) to six. Sam, Nan, Bob, and Liz reached 100% correct anticipations in the community condition for both mands either before or simultaneously with

the other two training conditions. Pat reached 100% correct anticipations simultaneously in all three conditions for the first mand, and reached criterion first in flash card and videotape conditions for the second mand. Don first reached 100% correct anticipations in the videotape condition.

For Mand 1, the median number of training trials to reach the community test criterion in the flash card condition was 29.0 (24%) and 42.5 (39%) more than in the videotape and community conditions, respectively, with similar results for Mand 2. The training time to criterion is summed for Mands 1 and 2 in Table 4. The median training time for the community condition was 25.5 (60%) and 20.5 (47%) min longer than that for the flash card and videotape conditions, respectively.

Response Analysis

An analysis of the five potential responses (correct anticipation, correct wait, nonwait error, wait error, and no response) during training for each participant is presented in Tables 4 and 5. The number and percentage of each type of response are presented for each training condition. The vast majority of responses during training were correct anticipations. When correct anticipations were not emitted, participants still tended to say the correct response but waited until the experimenter modeled it (i.e., correct waits). Incorrect verbal responses and no responses were extremely rare.

Flash Card Test

The flash card test presented after the third maintenance probe for Group 1 showed that Sam and Nan responded 100% correctly to all flash cards, and Pat responded correctly to seven of the nine signs.

DISCUSSION

The results showed rapid acquisition of all community-referenced words and phrases for each participant regardless of instructional method. The signs were learned in six or fewer sessions, with a minimal number of errors, and in a brief time. Responding

Table 3
Efficiency Data for Mand "What Would You Do if You Saw That Sign?"

Training condition and participant	Training sessions to criterion	Training trials to criterion	Training errors to criterion	Percentage inter-observer agreement
Flash card				
Sam	4	113	1	84
Pat	4	162	5	91
Nan	6	182	9	100
Bob	4	117	3	100
Liz	5	149	3	100
Don	5	157	4	94
Median	4.5	153.0	3.5	
Videotape				
Sam	4	117	2	93
Pat	4	154	7	93
Nan	4	115	1	100
Bob	3	90	2	100
Liz	4	114	1	100
Don	4	115	1	96
Median	4.0	115.0	1.5	
Community				
Sam	3	85	1	100
Pat	5	194	21	100
Nan	3	84	0	100
Bob	3	92	3	100
Liz	4	118	2	100
Don	5	140	1	100
Median	3.5	105.0	1.5	

Note. Training time to criterion is reported in Table 2.

acquired in the flash card and videotape conditions generalized to the community setting, and performance generally was maintained at 100% correct responding during follow-up.

The flash card test showed that participants in Group 1 generalized from the signs in the community and on videotape to the same words on flash cards, a substantial alteration in the dimensions of the textual stimuli. These results suggest that participants were responding to the textual cues on the signs during the community test rather than to irrelevant cues in the community.

This study was the first to investigate procedures for teaching sight words in the community. The

Table 4
Responses Analysis of Training the Mand "What Does the Sign Say?"

Training condition and participant	Correct anticipations		Correct waits		Nonwait errors		Wait errors		No response	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Flash card										
Sam	108	96.4	3	2.7	1	0.9	0	0	0	0
Pat	134	73.2	42	23.0	7	3.8	0	0	0	0
Nan	164	81.6	23	11.4	13	6.5	1	0.5	0	0
Bob	110	94.8	3	2.6	3	2.6	0	0	0	0
Liz	136	92.5	10	6.8	1	0.7	0	0	0	0
Don	137	89.0	15	9.7	2	1.3	0	0	0	0
Videotape										
Sam	108	94.7	4	3.5	2	1.8	0	0	0	0
Pat	137	88.4	9	5.8	9	5.8	0	0	0	0
Nan	109	82.0	15	11.3	9	6.8	0	0	0	0
Bob	82	95.3	4	4.7	0	0	0	0	0	0
Liz	108	91.5	8	6.8	2	1.7	0	0	0	0
Don	111	88.8	9	7.2	5	4.0	0	0	0	0
Community										
Sam	81	95.3	3	3.5	1	1.2	0	0	0	0
Pat	135	67.2	56	27.9	2	1.0	4	2	4	2
Nan	81	89.0	5	5.5	5	5.5	0	0	0	0
Bob	82	92.1	4	4.5	3	3.4	0	0	0	0
Liz	108	86.4	16	12.8	1	0.8	0	0	0	0
Don	135	93.1	8	5.5	2	1.4	0	0	0	0

results also confirmed that flash cards can be used to teach community-referenced sight words to students with moderate mental retardation (Ault et al., 1988). Although flash card instruction has been successful for sight vocabulary acquisition, past research has not tested for generalization to community settings or compared this technique with videotape instruction and instruction in natural settings. These results also confirmed past research findings showing success using videotapes to promote acquisition and generalization of functional skills (Charlop & Milstein, 1989).

The success of each instructional method may be attributed, in part, to the constant prompt delay procedure. Stimulus control was quickly transferred from the trainer's prompt to the textual cues. The results confirmed past research that showed the constant prompt delay procedure to be a rapid and easy technique to transfer stimulus control when teaching sight words (Ault et al., 1988). The present study extended this finding to community-ref-

erenced sight words taught by videotape and in a community setting.

In addition to quantitative measures of procedural effectiveness and efficiency, instructional methods should also be evaluated with respect to practical considerations. Teaching community sight words in the community permits the use of naturally occurring cues and, potentially, consequences. This eliminates the need to program transfer of stimulus control from artificial or simulated conditions, and reduces the time and expense of constructing simulations.

The advantage of flash card instruction in school is that it allows massed trials to be completed rapidly in a rigid daily schedule or when staff or transportation may not be available for community instruction. Flash cards also are easy and inexpensive to produce; however, they are an artificial representation of the natural discriminative stimuli and potentially present a problem for transfer of stimulus control. Transfer from flash cards to natural

Table 5
Response Analysis of Training the Mand "What Would You Do if You Saw That Sign?"

Training condition and participant	Correct anticipations		Correct waits		Nonwait errors		Wait errors		No response	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Flash card										
Sam	108	95.6	4	3.5	1	0.9	0	0	0	0
Pat	146	90.1	11	6.8	5	3.1	0	0	0	0
Nan	162	89.5	10	5.5	9	5.0	0	0	0	0
Bob	108	92.3	6	5.1	3	2.6	0	0	0	0
Liz	137	92.0	9	6.0	3	2.0	0	0	0	0
Don	138	87.9	15	9.6	4	2.5	0	0	0	0
Videotape										
Sam	109	93.2	6	5.1	2	1.7	0	0	0	0
Pat	141	92.0	6	3.9	7	4.5	0	0	0	0
Nan	109	94.8	5	4.3	1	0.9	0	0	0	0
Bob	83	92.2	5	5.6	2	2.2	0	0	0	0
Liz	108	94.7	5	4.4	1	0.9	0	0	0	0
Don	110	95.7	4	3.5	1	0.9	0	0	0	0
Community										
Sam	81	95.3	3	3.5	1	1.2	0	0	0	0
Pat	130	66.7	43	22.1	13	6.7	8	4	1	0.5
Nan	81	96.4	3	3.6	0	0	0	0	0	0
Bob	82	89.1	7	7.6	3	3.3	0	0	0	0
Liz	108	91.5	8	6.8	2	1.7	0	0	0	0
Don	135	96.4	4	2.9	1	0.7	0	0	0	0

signs should be positively related to the degree of similarity between their stimulus dimensions (Bates & Cuvo, 1984).

Videotape instruction combines the advantages of flash cards (i.e., mass trials, easy use) in a simulation that more closely approximates the natural environment. The natural discriminative stimuli are presented on the videotape with good fidelity. Also, videotape materials can be used repeatedly, instruction is less time consuming than taking participants to community locations, and school-based instruction can reduce the possibility of socially stigmatizing students in the community.

In the present research, all conditions produced educationally significant outcomes with minimal real differences among conditions. Analysis of the practical advantages and disadvantages does not clearly lead to the selection of one instructional method. On the one hand, the results supported the effectiveness of community instruction for teachers who have access to the community. On

the other hand, the data also showed that generalization occurred from flash card and videotape instruction to community settings. These latter instructional methods may have great utility for teachers who either have limited access to the community or who wish to combine simulated and community instruction.

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